

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Eleven Point River

Waterbody Segment at a Glance:

| | |
|------------------------------|--|
| County: | Howell |
| Nearby Cities: | Willow Springs |
| Length of impairment: | 0.4 miles |
| Pollutant: | Chlorine |
| Source: | Willow Springs Waste-Water Treatment Plant |



Note: Eleven Point River is proposed to be deleted from the 2002 303(d) list

TMDL Priority Ranking: Medium

Description of the Problem

Beneficial uses of the Eleven Point River

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption
- Cool Water Fishery

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

- The specific criteria (standards) for chlorine are found in Missouri's Water Quality Standards, 10 CSR 20-7.031 Table A, page 17. There are no numeric criteria for Cool Water Streams, and in their absence, the criteria for Warm Water Streams are used. The standard is 0.01 milligrams per liter (mg/L or parts per million), expressed as total residual chlorine (TRC).
- Antidegradation Policy – Outstanding Natural Resource Waters are classified in Missouri Water Quality Standards as "Tier Three Waters". For these waters, no degradation of water quality is allowed. 10 CSR 20-7.031(2)

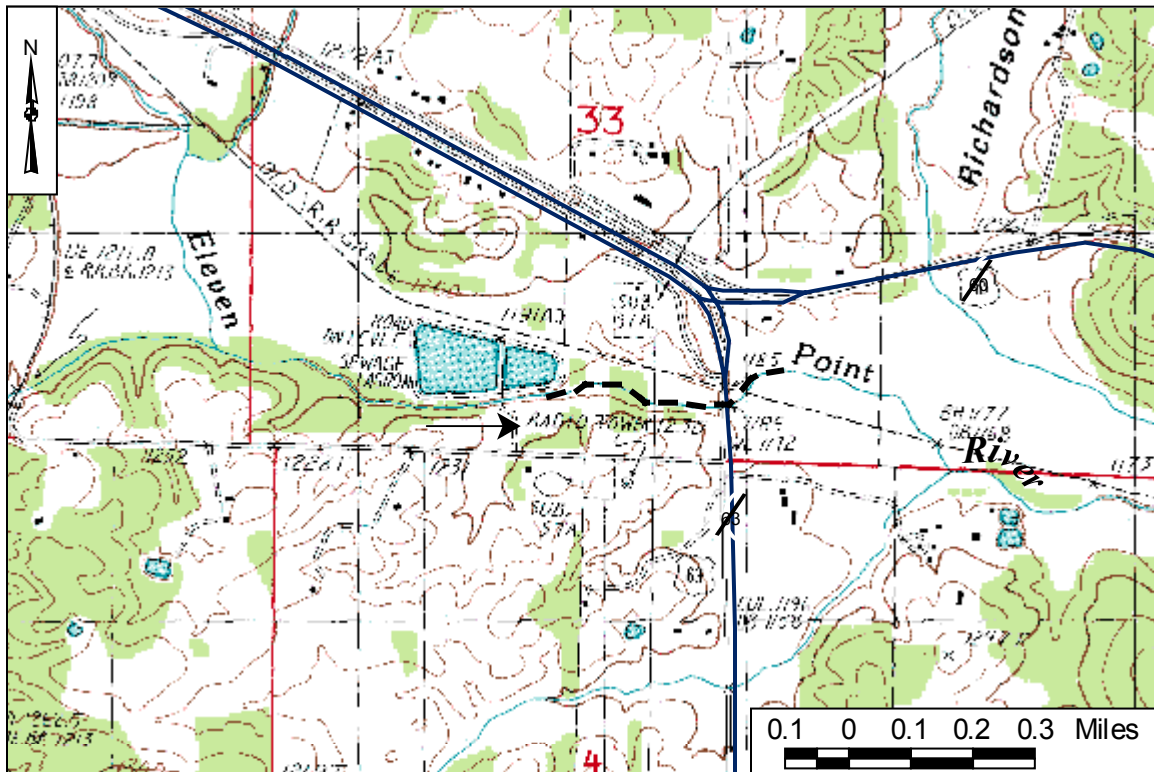
The Eleven Point River is designated an “Outstanding National Resource Waters” in the Missouri Water Quality Standards 10 CSR 20-7.031 Table D from the headwaters near Willow Springs in Howell County to Highway 142 in Oregon County. Outstanding National Resource Waters are “Waters which have outstanding national recreational and ecological significance. These waters shall receive special protection against any degradation in quality. Congressionally designated rivers, including those in the Ozark national scenic riverways and the wild and scenic rivers system are so designated.” 10 CSR 20-7.031 (1) (O).

The effluent discharged from the Willow Springs Wastewater Treatment Plant (WWTP) dominates this reach of the Eleven Point River when water levels are low. Low flow conditions usually occur during late summer and early fall, when rain is less frequent. The presence of chlorine in the stream under low flow conditions creates an unsuitable environment for most species of fish and other aquatic life. Missouri Department of Natural Resources’ Stream Survey Sampling Reports from 1990 and 1993 noted a chlorine odor, a light colored stream bottom, and no algae, aquatic invertebrates or fish immediately downstream of the treatment plant. Experience shows that when an odor of chlorine is present, there is more than enough chlorine to cause toxicity to aquatic life. Bleached rocks on the bed of the stream are also frequently observed when too much chlorine is present in the water.

The Eleven Point River is a “losing” stream. This is a stream where much or all of the flow can go underground and come into contact with groundwater. Missouri’s Water Quality Standards require all discharges to losing streams be disinfected to prevent bacterial contamination of drinking water wells. The Willow Springs WWTP disinfects the water discharged from the plant with chlorine. State standards also require dechlorination (a process that removes chlorine) when discharging to a stream the size of the Eleven Point River.

The Willow Springs WWTP permit has required dechlorination since July 1999. This permit allows a monthly average and daily maximum of 0.01 milligrams per liter (mg/L) of Total Residual Chlorine (TRC) in the effluent, which is protective of aquatic life. Quarterly monitoring of TRC in the effluent is also required. Willow Springs met the TRC standard in their December 2000 monitoring report for the first time. The U.S. Environmental Protection Agency approved this TMDL Jan. 12, 2001. The Department of Natural Resources inspected the stream during the summer of 2001. There were no chlorine toxicity problems in the stream. This stream is being recommended for deletion from the 303(d) list. See map below.

Map of Willow Springs WWTP and the Impaired Segment of the Eleven Point River in Howell County, Missouri



----- Impaired segment → Direction of flow

For more information call or write:

Missouri Department of Natural Resources

Water Pollution Control Program

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